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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/610,640	07/05/2000	Koji Eriguchi	43889-951	5513

7590

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McDermott Will & Emery  
600 13th Street N W  
Washington, DC 20005-3096

EXAMINER
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EVERHART, CARIDAD

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/610,640

Applicant(s)

ERIGUCHI ET AL.

Examiner

Caridad M. Everhart

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 41-68 and 73-140 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-68, 73-140 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Claim Objections***

Claims 41-103 are objected to because of the following informalities: As a result of a rejection under 35USC 112 made in the Office Action mailed 8-6-02, it seems that the recitation "chang of rate of a ratio" has been substituted for the recitation "change rate". This recitation was not suggested by the examiner in the previous Office Action, as it was only pointed out that it seemed that a ratio was being calculated rather than a rate. For example, in Maris, et al.(US 6,087,242) the quantitiy is disclosed as a fractional change(col. 6, lines 5-10). It is regretted if the recitation "change rate" was misinterpreted in the previous Office Action. Any inconvenience caused by this misinterpretation is regretted.. It is now clear that "change rate" was defined by applicant in the specification and in the claims. Because it is clear that the "change rate" was defined, it is requested that the recitation "change of rate of a ratio" should be replaced if indeed "change rate" was intended, unless "change of rate of a ratio" is intended, and in that case it is respectfully requested that the support for this recitation be pointed out in the specification. The following claims require correction:

Claims 41-48,50-53, line 7; claim68, line 2, claim 73,74, 75,76, 77, lines 11 and 15; claims 78,80,81,82, line 11; clam 84, line 5, claims 85 and 86, line 3; claim 90, line 5;.

It is requested that the words "proper" and "predetermined" be replaced with a recitation such as that at the bottom of page 47 of applicant's disclosure, which discloses that a range may be determined by experiment for the electric property under consideration, because there is not provided in the disclosure a standard by which

that which is "proper" can be determined, and the word "predetermined" should be replaced by a positive recitation of process limitations.

Appropriate correction is required.

#### Terminal Disclaimer

The terminal disclaimer filed on 11-6-02 has been reviewed and is accepted.

The terminal disclaimer has been recorded.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 49, 56-61, 63-67, 78-83, 112, 122-126, 129-140 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimbergen, et al. ("Grimbergen")(US 6,129,807).

Grimbergen discloses a process for in situ monitoring of plasma etching or of plasma deposition processes which include the steps of using an optical method which may be an ellipsometric method to measure a property in situ and adjusting the a process parameter and continuing the process. (col. 1, lines 9-15, 54-67; col. 2, lines 1-8; col. 3, lines 38-46; col. 5, lines 9-55). The limitations of the dependent claims such as the steps involved in the and the etching and deposition are encompassed by Grimbergen, as the processes disclosed by Grimbergen to which the process of detection of a property can be applied include the processes of plasma etching and plasma deposition, the steps of which are well known to one of ordinary skill in the art.

Claims 43, 44, 47, 48, 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maris (US 5,706,094).

Maris discloses a method of detecting changes in a semiconductor substrate region by intermittently supplying exciting light to the region and calculating a change ratio wherein the processing may be an implantation .(col. 1, lines 20-33; col. 3, lines 8-35; col. 4, lines 40-57; col. 5, lines 62-67). With respect to the frequency of the light, it is within the ordinary skill in the art to choose the frequency of the light(col. 13, lines 5-10).

Claims 41-42,45,46,52-55,62,68,73-77,84-100,101-111,113-121,127,128 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maris as applied to claim 43 above in view of Grimbergen et al as applied to claim 49 above.

Maris is silent with respect to the application of the method of evaluating in situ semiconductor properties to etching, heating, and deposition processes.

Grimbergen discloses applying in situ optical measurements to etching, heating and deposition processes( col. 1, lines 38-46; col. 7, lines 1-3, 38-42; .

One of ordinary skill in the art would have been motivated to have applied the method disclosed by Maris to other proceses as taught by Grimbergen because Grimbergen discloses that a known optical method may be used in the process taught by Grimbergen(col. 3, lines 1-8).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 703-308-3455. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 703-308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

*C. Everhart*  
Caridad M. Everhart  
Patent Examiner

C. Everhart  
January 27, 2003